Workshop name: "Supporting Regional Plans"

Q1. What material should be included in the Statewide Plan in order to coordinate and enhance the Regional Plans?

- **Key Question 1 Challenges**
  - Lack of resources for planning staff (15 votes)
  - Standardized methodology for EVSE for PEV planning (11 votes)
  - Identify how Statewide Plan can be used by regions (9 votes)
  - How to leverage lessons learned from regions with PEV plans (6 votes)

- **Key Question 1 Solutions**
  - Toolkit – guidance for regions (13 votes)
  - Statewide plan should reference the bigger picture (10 votes)
  - Statewide plan should start with synthesizing regional plans identifying what needs to be added – integrate best practices from regional plans and identify what should be used in each region (7 votes)
  - Education – including customer education (e.g. costs for set-up of at home charging) (7 votes)
  - Templates: generic plan, reporting, permitting, zoning/building codes (7 votes)
  - Minimum statewide standards with local level flexibility (6 votes)

Q2. What information can be provided to CEC/NREL from regional Planning activities to improve the Statewide Plan?

- **Key Question 2 Challenges**
  - Data: Regional travel demand data (7 votes); Centralized resource for data (6 votes); Existing survey data (4 votes)

- **Key Question 2 Solutions**
  - Data access: Current/planned EVSE and PEV location data (15 votes)

Workshop name: "Statewide & Inter-Regional Issues"

Q1. What are the critical issues requiring coordination between regions?

- **Key Question 1 Challenges**
  - Planning staff cuts in cities/counties limit participation (5 votes)
  - There is a need for vehicle data tracking tools and technology to support accurate assignment of funds for road maintenance (model TBD) in a non-fossil fuel environment – infrastructure knowing 'where' the miles are driven (5 votes)
    - More data requests…
      - Institutional structures and incentives for state agencies to share and disseminate regional and inter-regional data (2 votes)
      - Inter-region transportation surveys – How much traffic travels between regions; Where do they stop and how often?
      - Identify popular destinations visited by consumers in multiple regions
      - Frequency of travel from one region to another by an EV (2 votes)
  - Cost effectiveness, duty factor, economic model for host will be challenge for DC fast charge aimed at connectivity (4 votes)
  - No standardized permitting requirements between AHJs on commercial/residential installs (4 votes)
  - Can we develop incentives to get cities to coordinate? (4 votes)

- **Key Question 1 Solutions**
  - Solutions requesting data
    - Need database for planned chargers, not just installed, so regions can plan simultaneously and not reactively (11 votes)
    - Posting "finalized" fast charging projects on a website (4 votes)
    - A state "wiki" for PEV owners to "suggest" locations best for them and the frequency they expect to use (3 votes)
    - An ultimate lead agency and platform to which to feed data (1 vote)
    - Share info about demand for charging from other regions (1 vote)
    - A web-based, publicly available database of existing infrastructure with an overlay of modeling data of recommended sites from sources such as UC Davis, EPRI, Irvine, and UCLA
    - Web-based info sharing within and between regions
    - Develop a common open database for active, planned, and driver recommended fast charge station locations
    - Supply: where are chargers now and in future
  - CEC may need to fund areas that are gaps in the NRG CPUC activities (10 votes)
  - CEC should identify priority sites for inter-regional chargers (esp. DCFC) and link funding to these sites specifically; Site prioritization should occur with reg. price consultation (9 votes)
  - Require NRG site selection process be open to public, government agencies, competing suppliers; Sacramento not included in settlement (5 votes)
  - Utilize air districts for coordination (5 votes)
  - CA PEV Collaborative CEC convenes with CA Governor's office (4 votes)

Q2. How can State agencies identify key corridors between regions (or major urban areas) that might warrant EVSE coverage?

- **Key Question 2 Challenges**
  - How do we establish a viable business model for "corridor" charging that gets infrequent use for both 1) capital, and 2) O&M (13 votes)
  - Identify "early majority" PEV buyers and conduct targeted survey of travel needs (7 votes)
  - For DC Fast Chargers: How to balance long-distance corridors (e.g. 5) with inter-city corridors (e.g. 99); Long-distance corridors help Oregon to LA travel; Inter-city supports access to neighboring metro areas (4 votes)

- **Key Question 2 Solutions**
  - Freeway signage/signs (9 votes)
  - Lots of suggestions similar to bullets below suggesting modeling study results and/or data are used. Examples include travel demand model data, BEV sales data, registration data etc. (8 votes)
  - Choose corridors where there is higher density of shops, businesses, restaurants so that drivers have something to do while their car charges (example: HWY 99 vs. I5) (6 votes)
  - Conduct intervention study of charger users while charging to understand usage needs (5 votes)
  - Rely on regional PEVCCs for local knowledge of infrastructure needs (4 votes)
  - Corridors chosen based on electric miles expected to be accessed if there are chargers – based on research models (4 votes)
  - Access and use leisure travel data resources to support tourist destination economies (and passing through corridors, i.e. rural areas); existing data (4 votes)

Workshop name: "Cost-Effective Coverage"

Q1. How can state agencies determine the best use of public funds to support an evolving EVSE network serving multiple vehicle markets? How would this support vary between EVSE applications: residential, MUD, commercial, workplace, and DC fast chargers?

- **Key Question 1 Challenges**
  - Data
    - Ensure that public-funded EVSE are enabled to collect data and that data is made available for research and modeling work (4 votes)
    - Comprehensive mapping of expected infrastructure (2 votes)
  - Education/training
    - Confusion about networks and $ to fuel; Need for education about EVSE networks (3 votes)
    - Education or demonstration to show public EVSE is not very important for PHEV
  - Analysis
    - Time strategy for charging (4 votes)
  - Policy
    - Gaps to grow market demand: support by lowering vehicle purchase cost, subsidies for chargers, employers defray costs (8 votes)
    - State to streamline policies to have electricity as a transportation fuel (7 votes)
    - More proportional funding to residential (5 votes)
    - Careful to prioritize Gaps over selling PEVs (4 votes)
    - Clear metrics/definition of "best" use of public funds (3 votes)
    - GAP = Multi-family charging in municipal utility territories – retrofits in these areas – NRE focus (3 votes)
    - MUD and others lack of dedicated parking – need charging in city centers (3 votes)
    - "Utilization" metric may be misguided – use other metrics (1 vote)

- **Key Question 1 Solutions**
  - Data
    - Workplace/commercial known locations; solutions and funding to develop tools and manuals (2 votes)
  - Education/training
    - MUD: education/outreach, tech assist, financial (3 votes)
  - Analysis
    - Target large employee worksites (200+), especially public agencies; minimize costs to charge; expand/enlarge successful existing sites – target public transit parking lots (workplace surrogate) (4 votes)
    - Exploit economies of scale – install EVSE at workplace/MUD (3 votes)
    - Coordinate EVSE with sustainable communities planning (SB 375) (3 votes)
    - Use adaptive, phased planning approach to EVSE deployment, track and learn from usage, inform future deployment (2 votes)
    - Ensure EVSE funded today can meet demands of tomorrow
    - Identify major driving destinations that can only be reached if install fast chargers
    - Put resources where the State can have a critical impact
    - Location analysis should be a "local" decision (one ex. for DCFC – markets in cities)

        - Work with existing EV owner/user groups to gain insight into actual use
        - Use models, traffic demand data, etc. + expected market penetration to identify areas where EVSE is likely needed – high PEV traffic, long dwell times (ex. workplace)
    - Policy
        - Residential rebate program: private sponsorship, direct to end users, end users decide (17 votes)
        - Residential: Tax rebate, sell EVSE, Provide public funds as incentives (all-in costs), assist in areas, financing/rebates available to low-income areas, alt. refuel tax credit (or rebate) modeled after fed, statewide process/best practices/protocol for permitting and install, training for building inspectors/permitting, point of purchase rebate, special rate charge and equip. rebate, dealer incentives/rebates, net metering (on vehicles), let utilities sub meter to allow incentive pricing (15 votes)
        - Utilization/Drivers' Needs: Ask the drivers – provide funding based on drivers' needs; CP has 30,000 driver accounts, ask "where do you want your next charger?" (12 votes)
        - State focus should be on policy fixes/enabling policy (10 votes)
        - Workplace: support ($) to companies to install L1 or L2 charging, outreach, tariff, rebates, carbon credits/LEED (9 votes)
        - Demand charges are barrier for low use fast chargers, so public funds could support/offset demand charges until desired use reached (5 votes)
        - Public input on where they want charging (5 votes)
        - Destination charging: sponsored charging (i.e. adopt a charger), grants and matching funds (4 votes)
        - Funding to educate jurisdiction and expedite permit process for MUD deployment (4 votes)
        - MUD/residential: grants for jurisdictions to craft policy/plan (4 votes)
        - Provide competitive performance based rebates to spur private efforts, jobs and innovation (3 votes)
        - Direct investment to drivers to avoid stranded investment (3 votes)
        - Reduce interconnection timeframes by ensuring minimal utility and municipal delays (3 votes)
        - Deploying EMS to create new capacity "headroom" for MUDs to lower cost of EVSE upgrades (3 votes)
        - Commercial: fewer data collection requirements tied to public funds that drive up cost of infrastructure – more flexibility in implementation; mandates for some percentage of spaces devoted to EVs over time, similar to energy eff. stds (3 votes)
        - Building codes and standards for EVSE (3 votes)
        - Provide incentives to businesses for workplace charging – leverages public $ with private $ (3 votes)
        - Public safety network should be CA-level priority (3 votes)
        - Tiered rebate program (similar to federal 8411 program): let state funds fill private funding gaps in electrical infrastructure and EVSE equipment; various tiers for various applications (2 votes)
        - DCFC: government buildings, public parking, free (2 votes)
        - Take environmental benefit into consideration when funding network (2 votes)
        - Fast charging: EV elec. rate that mitigates impact at demand charges (1 vote)
        - Public funding should focus on (in order) public, MUD, residential (1 vote)

- Multi-family: include in Title 24, local agencies to include in remodels; MUD, long-term parking, and residential (1 vote)
- Need to develop communication protocols: TOU rate structures, universal access to EVSE, level 3 reservation system (1 vote)

Q2. How might measures of cost-effectiveness vary as applied across regions?

- **Key Question 2 Challenges**
  - Data
  - Education/training
    - Increase overall market – more cars, education (3 votes)
  - Analysis
    - Base cost effectiveness ultimately is the economic viability of a location; This comes from not just up-front costs but use and community economic benefit in $, GHG, health, etc.; They can be designed for … evaluation (3 votes)
    - Some EVSE is needed for direct use; some is needed just for public confidence; one metric cannot accurately assess both (3 votes)
    - Identify reasons why PEVs are not purchased and use public funds to address barriers in all areas (1 vote)
    - Evaluate cost effectiveness based on PEV take rate in region
  - Policy
    - State should fill in gaps to access for all Californians, but prioritize based on demand 2 eVMT (4 votes)
    - Potential disparity between regions; how do we divide money between regions (politics)
    - Avoid geographic targets, focus on markets/segments

- **Key Question 2 Solutions**
  - Data
  - Education/training
  - Analysis
    - Focus funds on technology solutions that address the key barriers of entry (cost, convenience, time to charge) and place infrastructure based on data showing traffic patterns to support the investment (6 votes)
    - Define technical cost effectiveness measures – kw/$<= station capacity/$; kwh/$ <= operational cost effective (5 votes)
    - Based on long-term feasibility, will they become self-supporting? How long before investment is recouped? (2 votes)
  - Policy
    - Regions themselves define top priorities (…, GHG, jobs, etc.); EVSE investments scored by priorities (8 votes)
    - Fund the process e.g. permit fees, ADA compliance (2 votes)
    - Invest based on population with set-aside for economically disadvantaged (1 vote) (with disagreement noted – need strong base first)

Workshop name: "Interoperability"

Q1. Should measures be taken (at the state agency level) to ensure that any PEV driver can use any charging station, regardless of their network membership? If so, what measures could ensure such access and how should they be addressed in the Statewide Plan?

- **Key Question 1 Challenges**
  - Retain possibility of no-network option (11 votes)
  - Keep costs low (6 votes)
  - Ubiquity (3 votes)

- **Key Question 1 Solutions**
  - Solutions involving Standards/Protocol
    - National standards (13 votes)
    - Yes – government monitor industry standards development; Include publicly-available free stations (7 votes)
    - Open charge point protocol (6 votes)
    - CA should support standards and encourage BUT NOT MANDATE interoperability (5 votes)
    - Use existing cards (4 votes)
    - Open standards (2 votes)
    - NEMA industry voluntary open standards (2 votes)
    - CEC funding for companies to develop standards (1 vote)
    - Public open internet settlement protocols should be encouraged (1 vote)
    - Define performance parameters instead of full standards (1 vote)
    - Government financial assistance to voluntarily comply with open national standards for interoperability (1 vote)
    - DMS Stds
  - Policy
    - Adoption of price disclosure for inter-network should be encouraged, price regulation should not be imposed 5 votes)
    - For public subsidy eligibility, needs to be "free" or "option of paying cash" (1 vote)
    - CA could set parameters for differential pricing for in/out of network drivers (1 vote)

Q2. What guidance can be provided to ensure that drivers receive enhanced performance from California's EVSE network?

- **Key Question 2 Challenges**
  - State can dramatically improve performance capabilities if it were to mandate a low cost machine-to-machine cellular data plan – only for energy-related products and systems (10 votes)
  - Station location and status data base needs to be neutrally managed, ensuring no self-interest of database operator (4 votes)
  - Ensure opt-out is possible for mapping (of EVSE) (4 votes)
  - Encourage cars to plug in by removing barriers; Educational opportunity for general public, seeing cars plugged in "in the wild" (2 votes)

- **Key Question 2 Solutions**
  - Mapping - must be lat/long location, not just mailing address or utility service address; Safety - require directional signage to aid user in finding exact location of chargers (11 votes)
  - AFDC Mapping system is evolving (10 votes)
  - Gov. investments require 100% open access; private sector figures out how (8 votes)
  - Locations on all maps with standardized data format & web feed, RSS (7 votes)
  - Government's role is to promote a level playing field across free, monetized, and all charging business models (6 votes)
  - Set standard for kW chargers with minimum fee displayed (4 votes)
  - AB-118 funds go to EVSE w/o interoperability issues (2 votes)

Q3. Are there other measures that should be taken in order to provide interoperability in a way that protects consumers?

- **Key Question 3 Challenges**
  - The CEC should ensure EVSE capabilities to respond to demand response programs and pro-actively coordinate with CAISO and V2G Roadmap and CPUC metering and telemetry group. (11 votes)
  - Keep market choice in interoperability (2 votes)

- **Key Question 3 Solutions**
  - Logo or voluntary markings to ID interoperable EVSE (7 votes)
  - Sponsored charging as an option to attract consumers (5 votes)

- **Other Comments with significant numbers.**
  - More comments on Standards echoing those above
  - Suggestions for meetings/video conferences between stakeholders, industry, government.